

NMCI Pierside Connectivity Concept of Operations (CONOPS)

Revision 3.3

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EDS
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1 Introduction

1.1 Purpose

The purpose of this document is to establish the overarching business and operational guidelines for Pierside Connectivity on the NMCI Program, including roles and responsibilities of Navy and EDS personnel. This document outlines the general Navy and EDS responsibilities for supporting the Navy's Pierside Connectivity requirements in accordance with the provisions of the NMCI contract. Site specific roles and responsibilities will be documented in individual piers' Site Concurrence Memoranda (SCM) for each Navy piers site, as agreed to between local Navy and EDS personnel. This document supercedes the previously drafted "USN Pier Connection and Service Concept of Operations" and "Concept of Employment (COE) for Pierside Connectivity" documents regarding pierside connectivity in the NMCI program.

1.2 Scope

In accordance with the NMCI contract, EDS will assume responsibility of transport connectivity for data from the ship's fiber optic connector at the skin of the ship to the first ATM switch located at a corresponding IT-21 NOC or Mini-NOC, and as a result of further agreements on Piers, provided data connectivity and umbilical support for the copper connections from the skin of the ship to the first entry point within the IT-21 NOC or Mini-NOC as the parties agree to the appropriate physical demarcation point. EDS will assume responsibility of transport connectivity for voice traffic if the applicable pier voice CLINs (0010AD and 0010AE) are ordered. Pier connectivity, including fiber and in some cases copper infrastructure, will be provided at all Navy piers where such connectivity now exists and has functioning infrastructure. EDS will maintain the pierside connectivity infrastructure at a level sufficient to meet applicable Service Level Agreements (SLAs) on the NMCI contract. The build out of piers with no existing infrastructure and the upgrade of piers to fiber optic media will be the responsibility of the Navy. EDS will assume responsibility of transport connectivity for these piers following completion of buildout or upgrade to fiber optic infrastructure.

1.3 Navy Pierside Background

1.3.1 General

The United States Navy depends on Radio Frequency (RF) links to maintain the required connectivity between a deployed ship or submarine and the supporting Fleet Network Operation Center (NOC). When these ships and submarines come into port, the RF links may be turned off and connectivity to the Fleet NOC or Mini-NOC provided through a Pierside Connectivity network. The USN provides 24x7 support for operational emergencies for secure and non-secure (from UNCLAS to SECRET level) networked connectivity for ships while in port. This network connectivity allows ships to bring down satellite connections and run voice, video and data traffic via a fiber optic or copper umbilical cable linking the ship to the pier. While ships are in port they fall behind the Established Regional Firewalls, thus receiving similar network security

services as those provided by the Fleet Network Operations Centers (NOCs), when utilizing the RF transit links. The pier connections are connected to a Network Management System and are monitored for connectivity problems.

Pierside network connectivity is provided at the following bases:

PACIFIC

NAVSTA PEARL HARBOR, HI
NAVAL AIR STATION NORTH ISLAND, CA
NAVSTA SAN DIEGO, CA
SUBASE SAN DIEGO FSC, CA
NAV WEAP STA SEAL BCH, CA
NSWC PORT HUENEME, CA
NAVSTA EVERETT, WA
TRIDENT REFIT FAC BOS, WA
NAVMAG INDIAN ISLAND, WA
MANCHESTER FISC, WA
PSNS, BREMERTON, WA
SUBASE BANGOR FSC, WA

ATLANTIC

NAVSTA NORFOLK, VA
NAVAL SHIPYARD NORFOLK, VA
NAVPHIBASE LITTLE CREEK, VA
NWS YORKTOWN, VA
NAVSUBBASE NEW LONDON, CT
NAVSTA NEWPORT, RI
PORTSMOUTH NSYD PORTS NHNWCF, NH
NWS CHARLESTON, SC
SUBASE KINGS BAY, GA
NAVSTA INGLESIDE, TX
NAVSTA ROOSEVELT ROADS, PR
NAVSTA GUANTANAMO BAY, CUBA
NAVSTA PASCAGULA, MS
NAVSTA MAYPORT, FL
NWS EARLE, NJ
NWS YORKTOWN, CHEATHAM ANNEX, VA

1.3.2 Network Topology

The Pierside network connectivity is created from attaching the umbilical cable to the Pier interconnection box with the patch panel on the Pier Riser. The Pier Head is the collection/consolidation point for signals coming from the Pier Risers. The number of Pier Heads at each port depends largely on the physical layout of the piers and number of berthing positions. The Pier Head contains the routers, modems, switches and other equipment required

to support the transport of the signal from the ship to the NOC. The signals from one or more Pier Heads are consolidated at a base collection point. From there, the consolidated signal is passed to the WAN Point of Presence (POP). The WAN provides the long-haul transport to the supporting Fleet NOC. At some Navy bases, the consolidated signals are terminated at the local Mini-NOC.

Currently, there is no overarching standard for the design and implementation of Navy pierside networks. Some Navy pierside networks support the use of a CSU/DSU while other pierside networks support Time Division Multiplexing (TDM) or Asynchronous Transfer Mode (ATM) technology. In addition, existing Navy pierside network infrastructures may be fiber optic, copper, or a combination of fiber optic and copper media. Surface ships and submarines may require one umbilical connection for all voice, video and data service; or may require three separate umbilical connections: one for voice, one for video and one for data traffic.

Though most Navy pierside network infrastructure equipment is physically located on the Navy bases, some equipment, such as the crypto suite, is physically located aboard the ships and submarines. In addition, some of the Navy pierside network equipment is used jointly to support other programs. The joint use requirements for this equipment varies from site to site.

Battle Force Tactical Training (BFTT) is a simulation/stimulation data stream that is an important tool for the Navy's operational forces. EDS will support the existing functional BFTT connection and infrastructure. Where it exists, BFTT data is currently transported virtually over the pierside network infrastructure. BFTT currently occupies one set of fiber within an umbilical. Therefore, only two can be connected to the IT21 infrastructure using a through-the-ship umbilical connection. Because of this limitation, the Navy may decide to upgrade the umbilical connectivity to establish connection where it does not exist today or may do so at a future date to provide a more effective use of the umbilicals and will be responsible for said upgrade.

1.3.3 Umbilical Connections

The Pierside Connectivity network begins at the Pier by connecting the umbilical cable to the ship. Figure 1 describes this connectivity. Umbilical cables provide the connectivity between the ship or submarine and the Pier Riser and may be either fiber or copper.

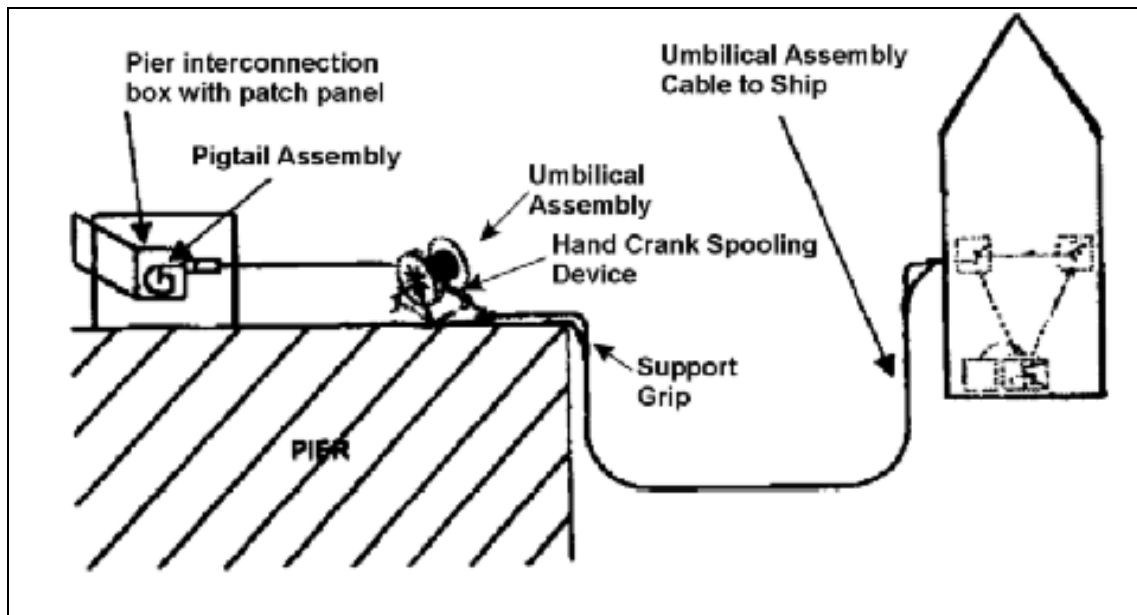


Figure 1. Mound to Ship Umbilical Connection

The umbilical cables are normally stored and maintained at each port facility. Some copper umbilicals may be stored and maintained with the respective ships.

There are two schemes of connectivity that can be provided for the umbilical cable to the ship: over-the-ship and through-the-ship routing

In the first scheme, called over-the-ship cable routing, a separate umbilical assembly is run from the pier to each ship (See Figure 2).

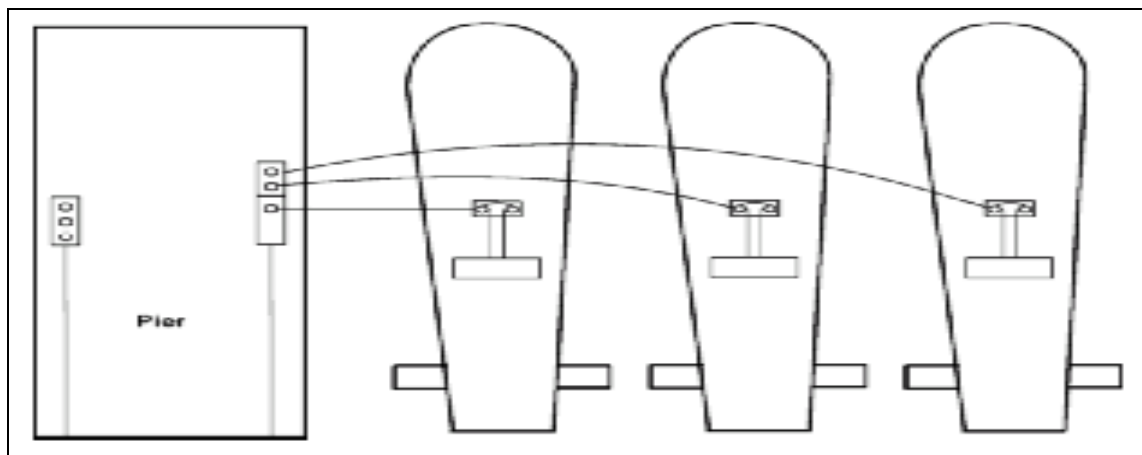


Figure 2. Over-the-Ship Cable Routing

The umbilical assembly to the middle ship in the nest is routed over the ship docked at the pier. Similarly, the umbilical assembly to the outermost ship in the nest is routed over the two inner ships.

The over-the-ship cable routing scheme for the umbilical assembly is specified for submarines in a nested configuration. Small surface craft (e.g., patrol boats) may elect to use this routing scheme also. Ships that are nested 2 across where one ship is 12 pins capable and the other is 2 pin capable will also use this configuration.

In the second scheme, called through-the-ship cable routing, an umbilical cable is routed from the pier to the closest ship docked at the pier (See Figure 3).

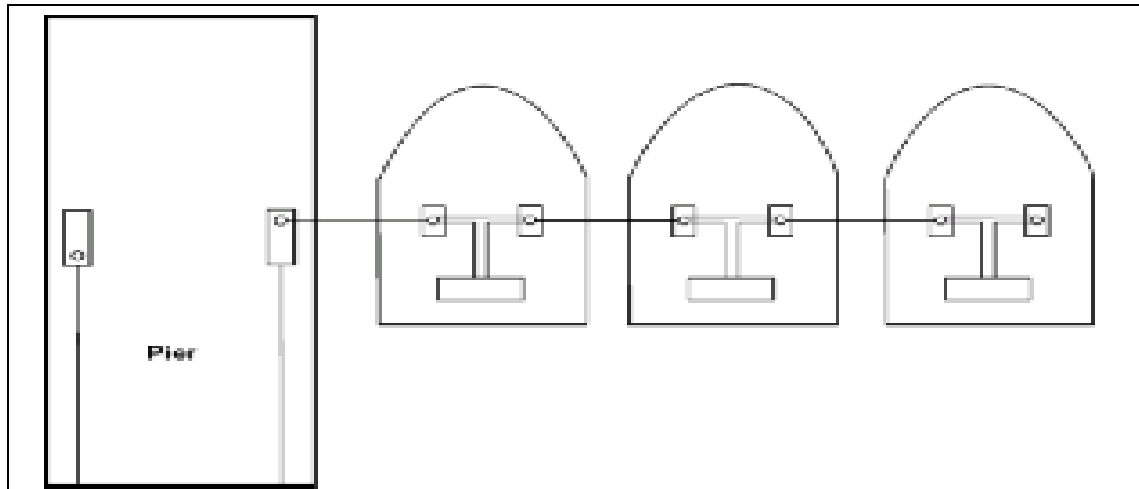


Figure 3. Through-the-Ship Cable Routing

A second umbilical assembly is routed from the pierside, docked ship to the middle ship in the nest. A third umbilical assembly is routed from the middle ship to the outermost ship in the nest. Basic connectivity is from pier mound to port connection on 1st ship, then from 1st ship starboard connection to 2nd ship port connection, then from 2nd ship starboard connection to 3rd ship port connection. In a nested configuration orientation, through-the-ship cable routing may be used for connecting the ships to the pier as long as the port and starboard connections on each ship are fully functional. Crossover cables are not typically used on FFG/DDG/DD/CG/MCM classes of ships if the above configuration is used. Crossover cables are only used on the AOE/LPD/LSD/AGF classes of ships that are moored on their starboard side to the pier. They are not used on the CV/CVN/LHA/LHD/LCC classes of ships.

The through-the-ship cable routing scheme is specified for surface ships in a nested configuration, when all ships are using 12 pin cables.

1.4 NMCI Pierside Connectivity Contractual Background

Contractual guidance on the implementation of pierside connectivity for the NMCI Program is contained in the following documents:

- NMCI Contract, Attachment 10, Interface Control Document (ICD), Section 5, NMCI Interface to IT21 Pierside, as modified by P00059;
- NMCI Contract, Attachment 1, Statement of Objectives (SOO), Section 2.4, NMCI Infrastructure Service Delivery Points.

These documents are included in this Pierside Connectivity CONOPS as Attachments 1 and 2, respectively, for clarity and easy reference to specific contractual language.

2 Operational Roles and Responsibilities

2.1 General Roles and Responsibilities

Under the provisions of the NMCI contract, as described above, EDS will assume responsibility under an AOR for providing (i) connectivity and transport for pierside data and (ii) data umbilical cable equipment and operations. EDS will assume responsibility of transport connectivity for voice traffic if the applicable pier voice CLINs (0010AD and 0010AE) are ordered. EDS will assume support of pierside connectivity with existing functioning copper and fiber infrastructure. The build out of piers with no existing infrastructure will be the responsibility of the Navy. EDS will assume responsibility of transport connectivity for these piers following completion of buildout or upgrade to fiber optic infrastructure.

On an ongoing basis EDS will provide (i) network equipment, maintenance for the network equipment and break fix support for the network equipment and (ii) secure network circuits from the skin of the ship to the first ATM switch at the supporting Fleet NOC or Mini-NOC (fiber), or mutually agreed to logical demarcation point between the piers and the first entry point into the NOC/mini-NOC (copper), for those sites that currently have built out infrastructure and communications. EDS will maintain the pierside connectivity infrastructure at a level sufficient to meet the applicable NMCI SLA's. Any pierside connectivity upgrades desired by Navy NMCI customers will be negotiated separately on a case-by-case basis.

The Navy will provide to EDS as part of the transfer of responsibility:

- all existing umbilical equipment maintained at the naval stations and network equipment including all spare parts,
- an inventory of said equipment,
- any and all procedure manuals for the support of the operations of the umbilical cable operation, and
- all existing pierside network diagrams

EDS will support the existing functional BFTT connection and infrastructure. In some instances, it may be necessary to modify the connection inside/at the pier riser in order to establish a BFTT connection. Any connections/modifications of this type at the pier riser will be the responsibility of Navy BFTT personnel. Since BFTT occupies one set of fiber within an umbilical, only two can be connected to the IT21 infrastructure using a through-the-ship umbilical connection at any given time. Because of this limitation, the Navy may decide to upgrade the umbilical connectivity to establish connection where it does not exist today or may do so at a future date to provide a more effective use of the umbilicals. The Navy will be responsible for said upgrade.

The Navy will continue to be responsible for the operations of the network consisting of but not limited to: hardware and software tools to support the management of the network, WAN routing, configuration, management and monitoring, and 24x7 help desk support. EDS and the Navy will perform operational support as follows:

Tier 1- Monitoring of network for up/down (NOC functions) - Navy

Tier 2- Remote Diagnostics (over the shoulder) Software configurations - Navy

Tier 3- Remote Hardware diagnostics - EDS

Tier 4- Remote Hardware restore - EDS

Tier 5- On Site Support (Break Fix) – EDS

This tier structure represents the logical flow of problem resolution as well as the different levels of support and the assigned responsibilities.

At some Navy pier locations, there may exist pier network infrastructure that transports both pier and non-pier traffic. In such cases, the Navy will be responsible for identifying said network infrastructure as shared infrastructure. The joint use of and maintenance responsibility for shared infrastructure will be documented in each site's Pierside Site Concurrence Memorandum (SCM).

At some Navy piers sites, there may exist non-NMCI users of pierside network services. At sites where non-NMCI users exist, they will be either disconnected from the pierside network or will be separately invoiced for services provided beyond those supporting IT-21 data transfer. The Navy will be responsible for informing said users of the upcoming disconnection or their requirement to negotiate with EDS for continued data transport services across the pierside network.

2.2 Specific Roles and Responsibilities

2.2.1 EDS

2.2.1.1 Network Equipment Maintenance

EDS will provide secure transport services from each ship or submarine to the supporting Fleet NOC or Mini-NOC, or mutually agreed to demarcation point between the piers and Fleet NOC or Mini-NOC. EDS will assume ownership and maintenance of the existing pierside network, including fiber and copper infrastructure and associated active devices such as multiplexers, ATM switches and line conditioning equipment. Specifically, EDS will be responsible for the maintenance provided on the fiber and copper umbilicals kept on shore and transferred to EDS, the pier riser equipment, and the associated fiber and copper cable and infrastructure equipment that extends to the Fleet NOC or Mini-NOC, or mutually agreed to logical demarcation point between the piers and Fleet NOC or Mini-NOC. EDS will be responsible for the break fix component of these devices as well. Included are any normal daily operator level tasks. In addition, EDS will assist the Navy in routine pierside network troubleshooting tasks, as outlined in section 2.1. EDS will repair or replace defective EDS owned equipment identified through joint troubleshooting by EDS and the Navy.

2.2.1.2 Umbilical Equipment and Operations

EDS will assume the ownership of the fiber and copper umbilical equipment maintained at the naval stations to facilitate the existing support of the pierside connectivity. EDS will assume responsibility for only the functioning components of the operational environment at time of transfer. EDS and the Navy will ensure the initial inventory of umbilical cables includes the correct number and types required to match the respective ISNS/IT-21 configuration of supported ships and submarines at each pier location, EDS will assume this responsibility post

turnover. EDS will ensure continuity of operation for Navy ships and submarines still configured for use of copper umbilical cables where build out is complete. At some Navy pier locations, ships may maintain their own copper umbilicals. In such cases, EDS will not be responsible for maintaining said copper umbilicals.

EDS will provide umbilical support for those existing functioning piers including:

- Cleaning/Testing/Maintenance/Repair - EDS will ensure that the umbilical cables remain in good working condition. EDS will be responsible for cleaning, testing (using an Optical Light Source Test Setmeter for fiber umbilicals, and appropriate continuity/line loss tester for copper umbilicals), and replacing umbilical cables or components as necessary.
- Delivery/Hookup – Prior to the ship's arrival, EDS will transport the umbilical cable(s) to the appropriate pier. Upon ship's arrival, EDS will connect the 2-pin or 12-pin umbilical cable to the Pier Riser. Ship's personnel will be responsible for connecting the umbilical cable to the shipside connector. In the case of copper umbilicals kept onboard ships, upon ship's arrival, ship's personnel will hand the copper umbilical to EDS personnel who will connect the cable to the appropriate riser.
- Disconnect/Pickup – Ship's personnel will disconnect the umbilical cable from the shipside connector. EDS will disconnect the umbilical cable from the Pier Riser, retrieve the umbilical cable and return it to storage. In the case of copper umbilicals kept onboard ships, EDS will disconnect the umbilical cable from the pier riser and pass it back to the ship's personnel.

2.2.2 Navy

2.2.2.1 Port Operations

Port Operations will continue to direct the berthing location of ships based on the ships request for connectivity in response to the LogReq message. Port Operations will provide unclassified locator and ship movement lists detailing ship berthing locations for use by naval support facilities and EDS. Access to these lists - in either hard copy, electronic, or web-based format - will be made available to EDS personnel.

2.2.2.2 IT21E (LANTFLT)/RITSC (PACFLT)

The IT21E/RITSC of the shore component will continue to be responsible for ensuring the ship has unclassified network and classified network connections while at the pier. They will continue to assist in troubleshooting the network infrastructure and monitoring the network via a Network Monitoring Station. IT21E/RITSC will continue to monitor network performance to identify problems; coordinate network issues with other commands and EDS, and maintain configuration control of the network. The IT21E/RITSC will be responsible for hardware beginning at the first ATM switch at the Fleet NOC or Mini-NOC, or mutually agreed to demarcation point between the Fleet NOC or Mini-NOC, and within. All crypto material and hardware will be the responsibility of the Navy. IT21E/RITSC will continue to provide 24 hour trouble call support and 5 x 12 technical support to ships in port.

The Navy will retain responsibility for management of the Fleet NOCs and Mini-NOCs, ensuring the networks are properly configured between the ships and the supporting Fleet NOC or Mini-

NOC, and provide assistance to the ship/submarine in the configuration of the network to support specific ship or submarine requirements and assist in troubleshooting the network to identify the cause of any loss of connectivity between the ship or submarine and the supporting Fleet NOC or Mini-NOC, as outlined in section 2.1.

2.2.2.3 Local Navy Submarine Support Detachment

The designated local Navy Submarine Support Detachment or Unit (SSD or SSU) (i.e. COMSUBRON ELEVEN) will continue to be responsible for the configuration, maintenance, and issuance of the suitcases for all submarines. All of the submarines that are stationed locally have a suitcase assigned to them. Visiting submarine personnel will call the SSD or SSU for delivery of the suitcase.

2.2.2.4 Umbilical Storage.

The Navy will provide appropriate, on base umbilical storage space for EDS' use on the date of the assumption of responsibility of the pierside connectivity.

3 Transition

3.1 General

It is the Navy's and EDS' intent to perform the assumption of responsibility (AOR) to the existing piers network infrastructures as quickly and seamlessly as possible, without perturbing service to the Navy's ships and submarines. EDS will assign an NMCI Pierside Project Coordinator from an enterprise level to create a pierside AOR project schedule for the affected Navy piers. EDS will create two pierside AOR teams, one for PACFLT and one for LANTFLT. These teams will be responsible for gathering the information from the Navy, performing the due diligence to confirm the information, creating the solution for each pier site and working with Navy counterparts on the Pier Site Concurrence Memorandum (SCM) in order to begin the piers transfer as soon as practical.

NS Pearl Harbor will be the first site to commence AOR on or about 18 July 03. The Navy Tidewater Region (NS Norfolk and NAB Little Creek) will be the second region for Pierside AOR, planned to begin in July '03.

3.2 Survey.

Prior to transfer of the piers network, EDS and the Navy will conduct a pierside assessment and validation survey as described below:

Survey Team purpose:

- Audit physical and logical network components of the operational environment
- Verify configuration
- Identify pier to POP (IT-21) logical transport paths and bandwidths
- Determine demarc and service delivery points
- Identify circuit issues (e.g. leases)
- Identify all users on the transport path

Navy to provide:

- Physical and Logical Network Diagrams of operational environment (Piers and Pedestals)
- Inventory of legacy network hardware
- Inventory of pier umbilicals
- Maintenance contractor POC
- Pier escort with knowledge of infrastructure

EDS to provide:

- Pierside survey schedule
- Resources to conduct survey
- Security and Visitor Authorization Process Management
- Survey Assessment Report
- AOR dates and cutover schedule

Once the survey has been completed, the specific site will complete the SCM document and the AOR team will be contacted to ensure the site begins AOR as soon as practical.

3.3 *Documentation.*

A Site Concurrence Memorandum (SCM) will be developed by Navy and EDS to document solutions concerning pierside connectivity at the local installation. Each SCM will follow the outline in Attachment 3.

3.4 *AOR Transition Period*

Due to the complexity of the pier connectivity as-is configuration and management functions, the transition to EDS will include a shadow period of a mutually agreed to length, not to exceed 30 days, beginning from the date of AOR, where deemed appropriate by Navy and EDS personnel. EDS personnel shall work in concert with Navy personnel during the shadow period to allow for seamless transition of the operation and maintenance of the current infrastructure to EDS.

4 Procedures for Notification of Ship Arrival and Umbilical Deployment

Applicable procedures for notification of ship arrival and umbilical deployment will be included in each site's Pierside SCM.

5 Pierside Network Troubleshooting

General pierside network troubleshooting guidelines are presented in section 2.1. More detailed troubleshooting procedures will be included in each site's Pierside SCM.

6 Network Asset Ownership and Break Fix Support of Network

6.1 Asset Ownership- EDS-Owned Assets.

EDS shall maintain the Equipment and System Software used to provide the Pierside network Services at AOR. EDS and the Navy are responsible for Pierside network assets as follows:

EDS Responsibilities	Navy Responsibilities
<ul style="list-style-type: none">• Provide Equipment and Software at appropriate release levels and perform refresh in accordance with agreed to schedules.• Provide comprehensive third party supplier maintenance contracts to meet Equipment and Software support requirements.• Comply with change lead-time requirements for changes that may affect the Navy Software licensing agreements.• Pay third party supplier charges as necessary to provide maintenance for the Pierside network Equipment and Software provided by EDS.• Provide support personnel, Equipment, and facilities to install, assess, and evaluate Equipment and Software.• Comply with all IA Vulnerability Assessments (IAVA).	<ul style="list-style-type: none">• Provide Pierside network Applications Software at appropriate release levels in order for EDS to operate on current, or near-current supported releases of Systems Software.

6.2 Navy Request, Problem, and Change Management

(a) Pierside network Change Management. In addition to EDS' obligations as described in the Agreement, EDS shall employ and follow a Technical Change Management Procedure that includes the planning, analyzing, documenting, communicating, scheduling, approval, implementation, verification and follow-up of Equipment, Systems Software, and environmental changes to the Pierside network environment.

(b) Pierside network Problem Management. EDS shall respond to the Navy request for assistance in the event the network problem cannot be resolved using remote tools at the Navy NOC. This process will include problem identification, performing corrective action required to prevent future occurrences, root cause analysis, permanent resolution, and evaluation. EDS shall prioritize problems based on severity. EDS shall provide timely communication of the status of problems and corrective actions planned or taken to stakeholders.

(c) Audit Compliance Support. EDS shall provide audit compliance Services including providing an audit liaison and performing audit preparation support and coordination to confirm that audit requirements are met.

Without limiting the generality of the foregoing, EDS and the Navy are generally responsible for Pierside network problem and change management as follows:

EDS Responsibilities	Navy Responsibilities
<ul style="list-style-type: none"> • Redirect requests from non-authorized submitters to the NAVY-identified authorized submitters. • Provide coordination of receiving and processing the Navy's requests for services. • Provide change activity reporting, including a description of the change, system affected, date and time of change, duration of change, status of change, and change management trend metrics. • Ensure that changes are implemented after having been fully tested and approved by EDS and the Navy (to the extent required by the Technical Change Management Procedure), that changes are scheduled at appropriate times and dates in conjunction with other Navy Pier network activities. • Follow the Technical Change Management Procedure to control changes to the Pierside network-computing environment. • Provide and follow the Problem Management process that details the actions to be taken in response to an operational issue. • Identify an Audit Compliance Coordinator to act as the interface between a site's department managers and external audit groups. 	<ul style="list-style-type: none"> • Provide ongoing updated lists of primary and backup contacts for interaction with EDS. • Annually review lists of authorized request submitters and change approvers to ensure that authorized the Navy representatives approve all changes performed by EDS. • Prioritize changes as necessary based on the Navy business and financial requirements. • Provide written authorization to EDS if compliance report-required actions are not to be taken or should be overridden based on specific business requirements.

6.3 Break/Fix

EDS shall provide on-site support services, as provided for in the NMCI contract, including local, on-site technical assistance and troubleshooting when problems cannot be resolved using remote diagnostic tools or through phone support at the Navy NOC. In the event that Equipment must be repaired off-site, EDS shall provide repair services through an Equipment manufacturer-approved service center.

EDS shall provide On-Site Equipment Support Services that include the technical diagnosis and repair of defective network components, including the labor and parts required to restore the network component to normal operation.

Without limiting the generality of the foregoing, EDS and the Navy are responsible for On-Site Equipment Support Services as follows:

EDS Responsibilities	Navy Responsibilities
<ul style="list-style-type: none"> • Return dysfunctional devices to operation according to OEM standards. • Perform remote diagnostics with the End User when problems are routed to EDS. • Provide necessary parts and labor to repair or restore device to normal operation. • Perform virus scan as applicable and notification. • Perform OS update, if required. • Conduct asset validation; including End User profile updates, device asset tag check and model and serial number check. • Before an Equipment maintenance request is complete, EDS shall advise the Navy of the work performed and provide future avoidance or maintenance tips to prevent additional problems. • Restore the device to an approved base configuration in the event of repair. • Provide service personnel who are fully trained and certified by the applicable OEMs. • Update the asset management database with the correct logistics. • Conduct ongoing analysis of Equipment maintenance and call history to track service trends. 	<ul style="list-style-type: none"> • Secure base configurations in order to prevent unauthorized software installations. • Provide configuration as necessary to restore devices to operation. • Provide electrical and environmental services according to applicable OEM specifications.

7 Service Levels Agreements

Per the NMCI contract, the following SLA's are applicable to Pierside Service Delivery Points (SDPs):

- SLA 24 WAN Network Connectivity.
- SLA 25 BAN/LAN Communication Services.

8 Pricing

This capability is provided as a part of the NMCI basic service at no additional cost to the Navy, except for those items that are described as to be negotiated on a case-by-case basis.

Attachment 1. NMCI Contract, Attachment 10, Interface Control Document (ICD), Section 5, NMCI Interface to IT21 Pierside, as modified by P00059

5 NMCI Interface to IT-21 Pierside

5.1 General Description

NMCI provides secure transport connectivity for data between a pierside connection and the corresponding IT-21 NOC facility. IT-21 NOCs are located in Norfolk, Virginia and Oahu, Hawaii within the NMCI service area. Mini NOCs may exist at regional Fleet concentration areas in San Diego, Jacksonville and the Pacific Northwest within the NMCI service area. Voice connectivity at the pier (for IT21 ships in port) is initially expected to interface directly to the voice subnetwork or infrastructure of NMCI. For some ships, a pierside connection requires a separate voice and data infrastructure, while other ships may require a single infrastructure to carry voice and data (and video as well). These connections are only utilized when a ship is in port. Notional pierside architecture is shown in Figure 2 below. Every component shown in the figure may not be present at each site. In particular, the Mini-NOC may or may not be present at a particular base or region. The IT21 piers to be supported and the estimated bandwidth for the pier connections are provided in Appendix C. This capability is provided as a part of the NMCI basic service at no additional cost.

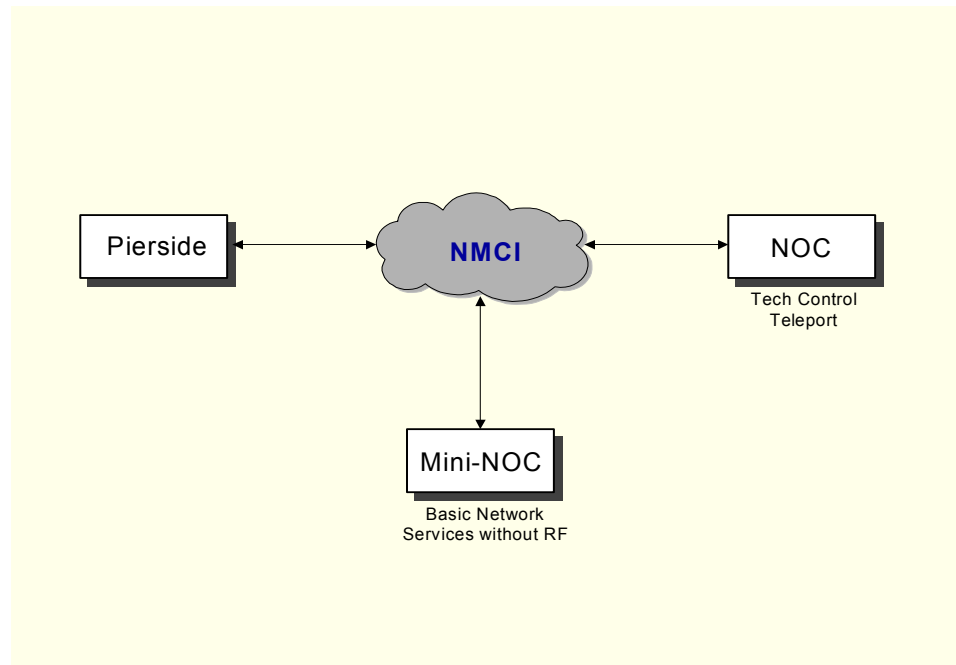


Figure 2: NMCI – IT-21 Interfaces

5.2 Physical Interface

5.2.1 General Description

The Navy is upgrading much of the CONUS and OCONUS pier cable plant to a standard Fiber Optic cable and umbilical design. The ship's umbilical will meet NAVSEA standards described and detailed in Table 3.

Drawing Number	Title
7325759	Pierside connectivity, umbilical assembly, fiber optic, ship-to-pier
7325760	Pierside connectivity, pigtail assembly, fiber optic jam nut mounted receptacle (hermaphroditic) to ST connector
7325761	Pierside connectivity, pier kit, fiber optic, pier interface to ship
7325762	Pierside connectivity, ship kit, fiber optic, ship interface to pier
7325763	Pierside connectivity, termination support kit for fiber optic ST connector and termination

Table 3: Umbilical Drawing Numbers

These NAVSEA Drawings call out three Commercial Item Descriptions (CIDs) for the hermaphroditic connector, termini and pierside fiber optic cable. The CIDs are in draft status. Three NAVSEA Drawings have been prepared for acquisition purposes until the CIDs have completed the NAVSEA Specification Review Board process. These NAVSEA Drawings are listed in Table 4.

Drawing Number	Title
7379171	Fiber Optic Connectors, Hermaphroditic, Multiple Removable Termini
7379172	Removable Termini For Multiple Termini Fiber Optic Connectors
7379173	Cable, Fiber Optic, Pierside Use Only, 12 Breakout Cable Count, Multiple Classes

Table 4: CID NAVSEA Drawings

Temporary numbers assigned to the hermaphroditic connector, termini and Pierside cable CIDs are A-A-XX-159, A-A-XX160 and A-A-XX161, respectively. These NAVSEA Drawings and CIDs can be found at the following Web Site: <http://www.it-umbrella.navy.mil>. On the bottom of the Web Page, click on the word "Fiber". Also, note that the draft installation standard for pierside connectivity cable components, Part 7 of MIL-STD-2042, is at this Web Site.

The NMCI contractor shall assume responsibility for pierside connectivity and transport services within 60 days of the official AOR date for the corresponding “Key Command” Unit Identification Code (UIC), as identified in Appendix C. The NMCI contractor shall provide connectivity and transport services from the ship’s fiber optic connector to the first ATM switch located at a corresponding IT-21 NOC or Mini-NOC. The NOC may be regional (i.e., San Diego, PACNORWEST, or Jacksonville) or Fleet based (i.e., Norfolk or Oahu). An IT-21 NOC is labeled as “Mini-NOC” or “Fleet NOC” in Figure 2. The distinction between a Fleet NOC and a Mini-NOC is that the Fleet NOC includes IT-21 Network services and a backside RF Satcom “Teleport” where the Mini-NOC includes only IT-21 Network services.

NMCI is responsible for ship’s fiber optic umbilicals. Each ship will have it’s own umbilical.

The contractor should be aware that some piers would initially have copper connections not the fiber connection described above (see Appendix C). Typically those connections are via standard RJ-48 connectors. Specifically, at contract award there may still exist copper based infrastructure for transporting voice, video and data services. A complete transition to a fiber optic transport medium is required. Ships have not yet been upgraded to incorporate voice traffic onto the fiber connection and must retain their legacy copper external voice lines connections to the pier until shipboard upgrades are accomplished. In addition to the standard data connections used primarily for the information flow discussed above, the NMCI contractor shall support secure (STU-III/STE) and clear POTS/ISDN voice service connectivity from the pierside to PSTN/DSN service delivery points via Base Area, Metropolitan Area networks or other terrestrial means.

5.2.2 Media Type

E.g., Multi-mode Fiber (Typically ST connectors), Single-mode Fiber (Typically ST connectors), Twisted Pair (Typically RJ45, RJ11, RJ48), Coax (Typically RG-57, 58) Wireless (Typically 802.11 for LANs).

Attachment 2. NMCI Contract, Attachment 1, Statement of Objectives (SOO), Section 2.4, NMCI Infrastructure Service Delivery Points

2.4 NMCI Infrastructure Service Delivery Points

The contractor shall provide at no additional cost to the Government enterprise infrastructure services that are transparent to the NMCI service area and OCONUS (if option is ordered) users but are essential to NMCI functionality, security, performance, and interoperability. If OCONUS services are not ordered, the Contractor shall make technical information available to the OCONUS provider to ensure interoperability between NMCI and OCONUS users.

"Infrastructure services" refer to the various management/operational activities, hardware, software, and transmission medium necessary for the delivery of services to NMCI users.

Infrastructure shall include connectivity and transport services to IT-21 provisioned piers and IT-21 NOCs within the NMCI service area, and the MCEN NOC in accordance with the NMCI Interface Control Document (Attachment 10).

Scope: All seats

Reference:

**Attachment 3. NMCI Pierside Site Concurrence Memorandum (SCM)
Template.**

**SITE CONCURRENCE MEMORANDUM (SCM)
FOR PIER CONNECTIVITY**

in

(location)

**UNDER THE NAVY MARINE CORPS INTRANET (NMCI)
CONTRACT (N00024-00-D-6000)**

Between

(applicable Navy command)

and

INFORMATION STRIKE FORCE (ISF)

As stated in the NMCI Pierside Connectivity Concept of Operations (CONOPS) “Site specific roles and responsibilities will be documented in individual Site Concurrence Memoranda (SCM) for each Navy piers site, as agreed to between Navy and EDS personnel.”

This Site Concurrence Memorandum (SCM) is published to document the daily operations of the Pierside Connectivity requirements for the (*location*). The Site Concurrence Memorandum is a living document that can be modified with both signing organizations’ consent.

1. INTRODUCTION

1.1 PURPOSE

In accordance with the NMCI Contract, EDS and its subcontractors, collectively known as the Information Strike Force (ISF), will assume responsibility for pierside connectivity in the *(location)* for the piers listed in **Appendix A** effective *(effective date)*. The purpose of this SCM is to document the operating agreements between *(Navy command)* and ISF in regard to the maintenance and operations of pier connectivity in the *(location)*.

1.2 GENERAL BACKGROUND

The *(location)* Piers under Assumption of Responsibility (AOR) are physically located within the confines of *(locations)*. In general, xx ship movements occur during the course of a calendar month. However, during exercises and times of war the number of ship movements could be considerably higher or lower.

Appendix B illustrates the current *(location)* Pierside Network Connectivity.

2. OPERATIONAL ROLES AND RESPONSIBILITIES

2.1 GENERAL ROLES AND RESPONSIBILITIES

Operational Roles and Responsibilities are defined in the NMCI Pierside Connectivity Concept of Operations (CONOPS). Specific local Roles and Responsibilities are defined in **Appendix C** of this document.

2.2 MISCELLANEOUS (where required for extenuating circumstances)

2.2.1 (Location A)

2.2.2 (Location B)

3. TRANSITION

3.1 GENERAL

In order to effect a smooth transition to ISF service delivery for pierside connectivity, inventories, Port Ops procedures, Pier traffic patterns and diagrams of pierside equipment, pierside locations and umbilical storage space have been provided.

3.2 SPACE CONSIDERATION

(Location) Public Works Officer (PWO) has provided Building xxx for ISF storage, maintenance of umbilicals and office space for the personnel who support this function. This space is provided in support of pierside operations only. Building xxx is not to be used for any purposes other than umbilical storage, maintenance and office space for the personnel who support this operation.

3.3 NETWORK EQUIPMENT

As specified in the NMCI Pierside Connectivity CONOPS, the Navy has provided a full accounting of Network Equipment to be turned over to ISF in **Appendix D**. If for any reason the

ISF cannot conclude a validation inventory within 30 days of AOR the Navy listing specified in **Appendix D** will be assumed as is. Both parties will agree to any changes to **Appendix D**. In the interim period prior to ISF completing its inventory validation efforts, ISF will support as if assumed. Any exceptions will be addressed on a case-by-case basis and added to the SCM.

3.4 UMBILICALS

ISF and Navy have jointly tested all umbilicals prior to ISF's Assumption Of Responsibility for umbilical delivery. Results of the umbilical testing and inventory efforts are provided as **Appendix E** to this document.

3.5 TRAINING PERIOD

(Navy) personnel will be available to provide guidance and training to ISF for a period not to exceed 60 days from ISF Assumption Of Responsibility. (Navy) personnel will guide and train in umbilical troubleshooting and Network active component maintenance troubleshooting as necessary when requested by ISF personnel during the transition period.

3.6 PIERS AND PIER HEAD ACCESS AND SECURITY

Access to the piers and pier head building is controlled. ISF personnel must have CAC identification. All contractor vehicles must have appropriate passes for access to piers. The Navy shall provide access to buildings housing equipment that supports pier connectivity (Pier Heads) upon receipt of the required clearance level documentation. Commander XXX Fleet will direct via Naval Message, Commander Naval Surface XXX (CNSx), Commander Naval Air XXX (CNAX) and Commander Submarine Force U.S. XXX Fleet, to send naval messages to all ships in their AOR, as well as Commander XXX, including ISF personnel in their access list to piers. ISF must send access requirements for the following pier head buildings to the organizations as listed through normal Security Clearance means:

(Applicable buildings)

After business hours access may be required by ISF personnel for the following additional buildings in the performance of their duties. Special arrangements have to be made for access to these buildings and any additional requirements for entry in these buildings is as noted:

(Applicable Buildings)

4. NOTIFICATION

4.1 GENERAL

Port Operations receives notification of ship movements via LOGREQs as described in the NMCI Pierside Connectivity CONOPS. ISF shall receive notification of ship's movements as described in the sections 4.2 and 4.3.

4.2 PORT OPERATIONS

(As appropriate per local procedures)

4.3 PORT OPERATIONS VOICE NOTIFICATION

For emergent or changes to ships movement schedule, Port Ops will call the ISF supplied on call number and ISF will follow its internal procedures to notify their personnel of these schedule changes. Contact information is provided in **Appendix F**.

5. TROUBLESHOOTING

5.1 GENERAL

Troubleshooting will occur as outlined in the NMCI Pierside Connectivity Concept of Operations.

General process flow for Ship's trouble calls is as follows:

(As appropriate per local procedures)

6. NETWORK ASSET OWNERSHIP

6.1 GENERAL

At Assumption Of Responsibility, ISF will assume ownership of the Network Equipment as identified in **Appendix D** (pending ISF verification of equipment), and the umbilicals as identified in **Appendix E**.

ISF shall provide break/fix support as identified in the Pierside CONOPS.

7. SERVICE LEVEL AGREEMENTS

7.1 GENERAL

No Service Level Agreements exist for timeliness of pierside delivery of umbilicals. ISF agrees to be "on the pier" as ships arrive per the ship movements List and Ship Locator schedule.

For emergent requirements, ISF will make "best effort" to deliver within a reasonable time frame, defined as ~ 2 hours. Emergent requirements will be defined as changes to the published schedule that provide less than 2 hours notification or unpublished movements.

For non-umbilical related problems, the ISF will respond within 2 hours of call to the NMCI Help Desk (response being defined as "on site" and working the problem).

8. STANDARD OPERATING PROCEDURES FOR SHIPS ARRIVAL AND DEPARTURE

8.1 SOP FOR SHIP ARRIVAL AND UMBILICAL CONNECTION

PORT ARRIVAL

1. MESSAGES

a. LOGREQ: LOGREQ message is sent from ship....

b. NOTIFICATION

(As appropriate per local procedures)

c. PREPARATION

(1) (Navy)

- (a) Configure logical connections across MAN/BAN.
 - (b) Obtains ship IP address from Ship IP Listing.
 - (c) Confirm the ships networks are in the firewall's trusted host table.
- Verifies that ship's router configuration has been set for ADNS Pier Connectivity (refer to ADNS Pier Connectivity Router Template), if requested by ship.

(2) ISF

- (a) Prepare and test umbilical cable using Optical Light Source.
- (b) Perform necessary PMS check.
- (c) Perform necessary PMS on pier fiber connection box.

d. ARRIVAL

- (1) ISF delivers umbilical to pier, meets ship.
- (2) SHIP: Have a responsible person available at the quarterdeck to meet and the ISF representative and to make the shipboard connection.
- (3) SHIP: performs the necessary PMS on shipboard connector box.
- (4) ISF installs the Umbilical Fiber Cable (once ship side is connected) to the Pier Head fiber connector. Problem found: If ISF finds a problem with the Pier Mound Box, they should contact the RITSC Help Desk and inform them of the nature of the problem. ISF will then perform the appropriate repairs.

2. RESTRICTIONS

- a. The following restrictions apply for each pier mound connection:

- (1) Inboard ship is 2 pin – connect directly to mound with 50'/500'/permanently attached pin umbilical as available.
- (2) Inboard ship is 12 pin – connect directly to mound with 12 pin umbilical.
- (3) Inboard ship is 2 pin – Outboard ship is 2 pin. The second ship can be connected, by contacting Pierside Engineering, and having a second 2 pin pigtail assembly installed in the mound, Then use a 250'/500'/permanently attached 2 pin umbilical, to connect to the ships, as available.
- (4) Inboard ship is 2 pin – Outboard ship is 12 pin – Inboard ship uses 250'/500'/permanently connected, as available, 2 pin and 12 pin for outboard ship must be draped over inboard ship.
- (5) Inboard ship is 12 pin – Outboard ship is 2 pin – 500' 2 pin umbilical must be draped over inboard ship.
- (6) Inboard ship is 12 pin – Outboard ship is 12 pin – Inboard ship gets connected to pier from the inboard ships' port connector - Outboard ship is connected to inboard ship's starboard connector. If there is a second outboard ship [3rd ship] again go from starboard connector on 2nd ship to port connector on the 3rd ship.

– **NOTE: Use of Crossover cables** –

(a) FFG/DDG/DD/CG/MCM class of ships: Crossover cable is not used unless there is a problem with the port connectors on any of the ships. If a ship is connected directly to the mound, using the starboard connector, then a crossover has to be used. As long as the connection is from mound to port connector (Inboard), then from starboard connector (inboard) to port connector (outboard) then a crossover is not needed. It does NOT depend on the ship's orientation to the pier. If possible the crossover should be attached on the mound side, NOT on the ship side.

(b) AOE/LPD/LSD/AGF class of ships: The crossover cable is only used when the ship is moored to the starboard side and is using the starboard connector. The chance of this class of ships being moored outboard of each other is slim to none.

(c) CV/CVN/LHA/LHD/LCC: Does NOT use a crossover cable at any time.
(7) ISF informs the ship's representative that connection is complete.

(8) Ship verifies link status from connection.

(9) RITSC/ship verifies the ship's connectivity to DISN (email and web). If connectivity cannot be established, then the ship will call the RITSC help desk (545-help) and open a trouble ticket. The Help Desk will assign the trouble ticket to the appropriate department for resolution. See Section 6 Trouble Calls: Procedures for reporting and repairing connectivity problems.

8.2 SOP FOR SHIP DEPARTURE AND UMBILICAL DISCONNECT

PORT DEPARTURE

1. NOTIFICATION

a. *(As appropriate per local procedures)*

b. IP SHIFT TO RF

(1) Shift should be conducted at least 12 to 01 hours prior to underway.

(2) IP shift through RF will not occur until umbilical removed.

(3) NCTS/NCTAMS PAC will verify ship RF connectivity.

c. DEPARTURE

(1) BCO will transfer phone lines 1-hour prior to underway.

(2) SHIP will disconnect umbilical 1-hour prior to underway and return to pier.

(3) ISF will disconnect umbilical from pier riser, coil up fiber and return umbilical to storage site.

(4) NOC will verify RF connectivity.

(a) Ping and trace route to ship router interface.

- (b) Telnet port 25 to ship's mail server to verify mail server response.
- (c) Confirm email is flowing (tail the mail logs).
- (d) Confirm with ship that they can web browse (.mil and .com sites).

9. ACCEPTANCE

Commander XXX Fleet

Signature: _____

Name: _____

Title: _____

Date: _____

EDS

Signature: _____

Name: _____

Title: _____

Date: _____